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ABSTRACT

This paper is a response to Renuka Vithal's paper entitled "Context, Change and Instability", which addresses the theoretical methodological implications resulting from the act of researching associated with social, cultural, and political approaches. Renuka's opinions on the role of educators as intellectuals involved in teacher training, the regionalization to the concept of power, the role of the intellectual, and researching mathematics education from a critical perspective are advocated. (KHR)

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Some words about "Re-searching mathematics education from a critical perspective"

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I would like to begin my talk by thanking the Organising Committee of MES2 for the invitation to discuss the paper of Renuka Vithal. I feel honored at this opportunity which has challenged me to think about questions that, in a way, have also been the subject of my reflections as mathematics educator. As a professor in a teacher training course, researching the field of Ethnomathematics, I have dedicated myself to thinking about the central theme discussed by Renuka in her paper. This concerns the theoretical-methodological implications resulting from the very act of researching, when the latter is associated with a social, cultural and political approach, and the empirical subject to be analyzed is pedagogical work with student teachers. Possibly all of us present here, educators committed to a critical approach to Mathematics Education, fully agree with Renuka when she says that "critical paradigm is significantly under-explored and under-represented in mathematics education research". In fact, I consider that most of what has been produced in Mathematics Education is still closely connected with very conservative ways of seeing Mathematics: a science embedded in neutrality, asepsis, in which, as Brian Rotman pointed out, "assertions proved stay proved forever (and must somehow always have been true), where all the questions are determinate, and all the answers totally certain" (Rotman, 1980:129). The mainstream Mathematics Education, as a recontextualizing field, in Berstein's words, is clearly connected to that vision of Mathematics. As opposed to this, the critical approach, in its different modalities, in recent years is achieving greater visibility, even knowing that it is still situated on the edge of Mathematics Education research. And it is not surprising that it is exactly in the so called peripheral countries that this edge approach of Mathematics Education has a wider tradition. If critical approaches in Education are relevant in countries where most of the population is wealthy, they are even more forceful in realities where the majority is poor, as in South Africa, Renuka's country and in Brazil, from where I come. Renuka clearly emphasizes this aspect in the section of her paper entitled "Context, Change and Instability".

Our experience in dealing with social inequalities has given us great pain, and a strong feeling of impotence. At the same time, this experience has enabled us to constantly seek new ways of dealing with the relationship between research and practice, which will allow us to contribute, very modestly, to diminish the suffering of many of those who live

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in peripheral countries. Thus, our harsh experience in dealing with the underprivileged places us in a position which I would call, to a certain extent privileged, to provide us with a profound understanding of their effects in constructing social identities.

Paulo Freire's original thought must be understood in this scene. With his African experience as educator and his work in Brazil with the poor, he learned about poverty and education as a political tool. In the early sixties, he argued that Education had a political dimension. Later on, he went further in his argument, saying that Education is political. Looking back at Paulo Freire's intellectual trajectory, authors like Tomaz Tadeu da Silva (1999:62) argue that "if he in a way anticipated the cultural definition of curriculum which would later characterize the influence of Cultural Studies on curricular studies, it can also be said that he initiates what could be called (...) a postcolonial approach to the curriculum" (...), an approach which seeks to problematize the power relations between countries which, in the previous situation were colonizers and those that were colonized (...), that "seeks to privilege the epistemologicla perspective of the dominated peoples". The contemporariness of postcolonial studies is increasingly strengthened at a time of excluding globalization which produces profound social and economic inequalities around the world.

The ideas developed by Paulo Freire and by the critical pedagogy, in consonance with modern thinking, greatly inspired mathematics educators committed to social change. Today, we are moving toward another landscape in which the contributions of postmodernism, poststructuralism , postcolonialism , feminist theorizations and in a broad sense, the Cultural Studies are being incorporated.

Based on these most recent contributions we can rethink what we have been doing in the field of Mathematics Education and construct new perspectives for this field of knowledge. Renuka's paper analyzes many of these new perspectives, "examining differentes facets of the research process and forms of participation". Since it is dense text, with many well thought-out ideas and profound arguments which discusses a complex range of facets of the subject studied, I chose to discuss a facet which permeates the whole paper.

This concerns the role which we educators play as intellectuals involved in teacher training. Renuka, supported by her qualified empirical research presents this point very clearly when she problematizes the "relation between the researcher and the research participants" (p.11). What is our role as intellectuals in this power relation? What are its effects in the construction of social identities?

To start the discussion, I would like to clarify the meaning I am lending to the expression "intellectual". Following Thomas S. Popkewitz (1991:218), I argue that it refers to the

> (...) institutional position and social relations of those who produce knowledge, more than to a normative criterion as to who has the knowledge and discernment.The intellectual is therefore, a class connected to historical formations and social positions of the occupations of producers of knowledge.

This statement allows us to consider educators as intellectuals, and their teaching activities to be seen as intellectual work. Thus, agreeing with this approach, my comments about Renuka's paper are connected to the examination of the intellectual work from the perspective of its function in the social world of which it is part, which is the equivalent to thinking about it as a social practice. As Renuka showed, her social practice was developed and articulated in two dimensions: the first of them is connected to the scientific field, " the world of academia", in which she has a position as a researcher, and the other is linked to the activity developed with the student teachers and the practitioners.

Pierre Bourdieu attempts to denaturalize academic practices, examining not only their internal determinations, the properly scientific ones, but also their social determinations, showing how the intrinsic and extrinsic interests are necessarily connected.

I would like to emphasize that the demystification of academic space allows the intellectual to examine also her/his own scientific practices from the sociological standpoint, looking at them as determining and determined by a field of forces, in which they act as agents, trying to maintain or increase cultural or social capital. Renuka's discussion about different paradigms of research (p. 7) may be analysed in this perspective. In effect, choices of problems, themes, methods or scientific procedures — considered more relevant inside academic communities, at different historical periods — can elucidate the indissociable connection between scientific and social strategies used by intellectuals who are attempting to satisfy their interests.

In our case, especially, who are committed to critical approaches in Mathematics Education, it is important to consider that also from the standpoint of the internal dynamics of the scientific field, the researcher who deals with some theme considered socially relevant faces a rather peculiar situation. What would appear to simplify her/his investigations, namely, the fact that the relevance of the theme studied might spare a more careful construction of the objects of research, effectively constitutes an element which renders work more difficult, to the extent that it might be involved in the illusion of obtaining easy profits. It is in this sense that one may interpret the observation by Bourdieu regarding " women's studies, black studies, gay studies", which can also be

extended to investigations connected with critical approaches. According to the author, those studies:

> (...) are, certainly, so much the less protected against the 'naïveté' of 'good feelings', which does not necessarily exclude the well-conceived interest in gains associated to "good causes", the less they have to justify their existence and the more they confer on those who take them over an efective monopoly (frequently demanded as a right), but leading them to enclose themselves in a sort of scientific ghetto (Bourdieu, 1990:28).

In brief, the above considerations have attempted to show that, if on the one hand the involvement of educators in themes directly linked to social approaches, shows their commitment to relevant social problems, on the other it also indicates another kind of profit which, often, goes unnoticed by them. That unveiling operation allows academic practices to be examined with less idealization, the myth of science for its own sake to be problematized, and ensures that the analysis that the intellectual her/himself performs of her/his role in the social world contain a larger dose of self-reflexiveness and criticism, qualifying the discussion on relations between knowledge, power, intellectuals, teaching and research.

This qualification assumes that the elements involved in these relations — knowledge, power, intellectuals, teaching and research — be thought of in a historical and geographic situation, connected to specific contexts, based on which one does not attempt to produce extrapolations. From this standpoint, Popkewitz (1991) presents an important contribution to the theme when emphasizing historicity in the formation of social patterns and their connections to a specific power juncture, establishing an inseparable connection between knowledge and power.

The author's approach deals with the idea that power is articulated in two conceptual dimensions. The first, associated with a more traditional view, is situated in a structural perspective, linking power to the global processes of dominance and subordination of social space. Without frontally opposing this focus on power, Popkewitz, however, problematizes it, indicating the effects which may be produced when one dichotomizes the social world between oppressors and oppressed: to see each of these groups as completely homogeneous and monolithic tends to cover up the actions and practices of individuals through which power also operates. Renuka clearly showed her attention to avoiding this dichotomy in research and the need to take into account the "multiple identities of the researcher and the research participants" (p.16).

The second dimension of power incorporated by Popkewitz in his theoretical formulation is strongly influenced by the ideas of Michel Foucault, in which, as opposed

to the ideal of an oppressive, centralized power, from a single source, the productive dimension of power is emphasized, a power distributed by capilarity throughout the social tissue without occupying fixed places. It is from this standpoint that Popkewitz (1991, p.223) considers that power

> is intrinsically connected to rules, patterns and styles of reasoning, though which individuals speak, think and act in producing their daily world. Power is relational and regional.

In introducing the idea of regionalization to the concept of power, following Foucault, the author attempts to stress the "multiplicity of social forms and power relations which occur in specific historic places" (Popkewitz, 1991:221). This approach allows intellectuals to be thought about not in generic, universal terms, but as connected to specific social struggles.

The theoretical approach of Popkewitz, articulating and looking for complementarity between these two conceptual dimensions of power — the first macroscopic and the second microscopic — is fertile ground for the analysis of the role of an educator as a researcher. In some way, Renuka deals with these two conceptual dimensions of power in her paper. Moreover, she pointed out the key importance of analysing power relations produced in the interactions of the researcher and the researched. This kind of issue provides us with a more profound understanding of the role of the intellectual in our times. I will argue that this role is moving from a Gramscian perspective to a Foucautian one.

In fact, from the Gramscian perspective, the role of the intellectual who is organically linked to the subaltern classes is privileged as the one who will perform the process which would lead these classes to "higher levels of culture", one of the conditions to build up a counter hegemony. This position, when transferred to the present times and situated in the specific contexts of social movements, points toward two questions.

The first of them concerns the possibility that the fragmented consciousness of a group — to Gramsci that of the "simple ones" — might become a "higher" conscience, unified, homogeneous, a concept which has been appropriately problematized by postmodern thought. The second question concerns the outstanding political position given to the intellectual. The privileged position given to the intellectual may not be seen as something "natural", inevitable. Foucault points out the problem of this position very appropriately. In his view, the more traditional view of an intellectual was conceived as " the one who told the truth to those who did not yet see it, and in the name of those who could not say it: conscience and eloquence". In this sense, the intellectuals placed

themselves " 'a bit ahead, or a bit to the side' to say everyone's mute truth". (Foucault, 1989:71). According to the French thinker

> what the intellectuals recently discovered is that the masses do not need them to know, they know ,perfectly well, clearly, much better than the intellectuals; and they say it very well. But there is a power system which bars, forbids, invalidates this discourse and this knowledge. A power which is not found only in the higher instances of censorship, but which penetrates very deeply, very subtly, into the tissue of society. The intellectuals themselves are part of this system of power, the idea that they are agents of 'conscience' and of discourse is also part of this system (Foucault, 1989:71).

One of the deductions which may be obtained from Foucaultian thought is the relevance of intellectuals placing permanently as the object of their concerns the need for self-reflection, so that their own discursive practices may be analysed and interpreted as participants and producers of a power system. Because, as said Foucault (1989:71), the role of intellectuals is "primarily to fight against the forms of power exactly where it is at the same time object and instrument: in the order of knowing, of 'truth', of 'conscience', of discourse".

More and more the space for "universal "intellectuals, who, with their powerful narratives will act as " awareness makers" and leaders of the "masses" diminishes. About the replacement of the character of the "universal" intellectual by the "specific" intellectual, Foucault (1989: 8-9) says:

> For a long time the so-called 'left' intellectual talked and saw acknowledged his right to talk as the only person who knew truth and justice. People would listen to him, or he intended to be heard as representative of what is universal. To be an intellectual was a bit to be everyone's conscience(...). It has been many years since anyone has asked the intellectual to play this role . A new mode of 'connection between theory and practice' has been established. The intellectuals have become used to working not at the 'universal' , the 'exemplary' , the 'fair-and-true-for-all', but in given sectors at precise points in which, they were placed by their own living or working conditions(...). Certainly, in this way they gained a much more concrete and immediate awareness of the struggles.

Authors such as Popkewitz (1991) have called attention to the point that the great proximity of a theoretical analysis of reality to the problem of immediate change privileges the researcher as an agent of this change, bestowing on her/him a heightened authority in this process. It is in this sense that Popkewitz argues that the intellectual needs permanently to practice her/his capacity for self-reflection.

As can be deduced from Renuka's study, she has had a special concern in exercising, locally, the self-reflection of which that author speaks. Renuka is aware that the privileged position from which she spoke to those student teachers could not be avoided. This leads her to discuss throughout the paper the problem of imposition, as in page 5, when she says: "While it must be acknowledged that interventions can never escape the problem of imposition, the difficulty or contradiction that occurs in this research, however, is related to how to deal with this impositional issue with reference to a particular perspective in theory, methodology and participation which argues against it in the educational setting."

Precisely this kind of concern can lead each of us to consider her/himself as a "specific intellectual", in the Foucaultian sense of the term. In this case each of us is seeing her/himself as an educator who performs

> a much more modest role, much less universal and much more local (...) a much more symmetrical role in relation to the other participants in the social struggles in which she is involved, in the sense that her knowing, her vision and her discourse owe as much to the interests of power as to those of any other participant (Silva, 1994:251).

As far as I can deduce from Renuka's arguments, although it is not mentioned, she considers herself as a "specific intellectual". In agreement with this position, she ends her paper problematizing the notions of emancipation and empowerment in research, saying that "rather than to speak of research carrying emancipatory intent, it may be useful speak of research as carrying possibilities and hope, an idea also put forward in the theoretical educational landscape." Renuka ends her paper referring to possibilities and hope in the educational landscape, and I will end my talk following Robin Usher and Richard Edwards (1994: 31), when they say:

> More than ever, education needs a critical scepticism and a suitable degree of uncertainty whilst close attention must be paid to the need of a careful deconstruction of the theorisations and discourses within which educational practice is located.

I hope that these thoughts on "Re-searching mathematics education from a critical perspective" that I have presented here will be a small contribution to the discussions which may provide elements for that deconstruction.

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